Physico-chemical characteristics of watermelon in Malaysia

ABSTRACT

Watermelon (Citrullus lanatus) is a popular fruit among Malaysians. Red-fleshed seeded and seedless, and yellow-fleshed watermelons are mostly selected as a dessert and available throughout the year in local markets. Therefore, this study was focused to determine the nutritional and physico-chemical characteristics of these watermelons. Red-fleshed seedless watermelon contained 89.7 ± 4.3% moisture, while red-fleshed seeded and yellow-fleshed watermelon had 87.5 ± 2.6% and 87.0 ± 2.7% respectively. No significant differences were observed for most nutritional and physico-chemical analysis between samples. However, there were significant differences for colour determination (L*, a* and b*) and amount of sucrose among the samples. Yellow-fleshed watermelon showed L* = 50.0 ± 6.9, a* = 5.8 ± 2.0, b* = 32.6 ± 8.8, red-fleshed seedless showed L* = 43.4 ± 3.5, a* = 25.1 ± 4.4, b* = 15.2 ± 4.1 and red-fleshed seeded showed L* = 38.2 ± 5.1, a* = 19.4 ± 7.3, b* = 15.3 ± 6.6. Total sugar contents determined by high performance liquid chromatography (HPLC) showed that red-fleshed seedless, red-fleshed seeded and yellow-fleshed watermelon consisted of glucose, fructose and sucrose. Amount of total sugar for red-fleshed seedless, red-fleshed seeded and yellow-fleshed watermelon were 95.0 ± 25.2 mg/g, 113.8 ± 31.6 mg/g and 100.6 ± 25.5 mg/g respectively.There was positive and strong correlation between total soluble solid with total sugar (r2 = 0.75). The results indicated that different varieties of watermelon had different nutritional contents and physico-chemical characteristics.

Keyword: Nutritional analysis; Physico-chemical; Red-fleshed watermelon; Yellow-fleshed watermelon